

Energy characteristics of ...

S/169/62/000/004/075/103
D218/D302

tial spectrum

$$\frac{\partial D(\epsilon)}{D(\epsilon)} = -a \begin{cases} \epsilon^{0.7} & \text{at } \epsilon > \epsilon_1 \\ 0 & \text{at } \epsilon < \epsilon_1 \end{cases}.$$

Further analysis shows that the effective width of the corpuscular stream should depend on the energy of the scattered particles. It is suggested that the regular field of the stream carries with it magnetic irregularities which give rise to scattering and diffusion of moderate-energy particles. The parameters of the streams, and the magnetic irregularities carried by them, are estimated. [Abstractor's note: Complete translation].

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DANILOV, A.A.; KRYMSKIY, G.F.; FILIPPOV, V.A.

Results of studying the quantity $\mathcal{J}'_{\text{eff}}$ in the differential
spectrum of π -meson production. Trudy IAFAN SSSR. Ser.
fiz. no.4:41-48 '62. (MIRA 15:12)

(Cosmic rays)
(Mesons—Spectra)

I 41073-65 EWG(j)/EWT(1)/EWT(m)/EWG(v)/FOC/EEC-4/EEC(t)/T/EWA(h) Po-4/Pe-5/Pq-4/

Pae-2/PeB/Pi-4 LJP(c) GS/GN

ACCESSION NR: AT5006968

3/0000/64/000/000/0064/0068

AUTHOR: Kuz'min, A. I.; Danilov, A. A.; Chirkov, N. P.

TITLE: Cosmic ray variations during the passage of cyclones

SOURCE: AN SSSR. Yakutskiy filial. Institut kosmofizicheskikh issledovaniy i aeronomii. Geo- i geliograficheskiye efekty v kosmicheskikh luchakh i polyarnykh siyaniyakh (Geo- and heliophysical effects in cosmic rays and auroras). Moscow, Izd-vo Nauka, 1964, 64-68

TOPIC TAGS: cosmic ray, cosmic ray variation, cyclone, cosmic ray neutron component, cosmic ray meson component, cosmic ray barometric effect, cosmic ray temperature effect

ABSTRACT: The meteorological effects of cosmic rays can be investigated in cases of the passage of "young" (in their initial stage of development) cyclones over an observation station. Charts of the synoptic situation for Yakutsk for the period 1957-1960 were used to select 10 identical cases of the passage of "young" cyclones over that station, when the center of the cyclone was situated at some definite distance. Cosmic ray component data were analyzed by the method of superimposition of epochs. Fig. 1 of the Enclosure shows the mean cosmic ray variations for the

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neutron and hard components at the earth's surface and various levels underground. It can be seen that with the passage of cyclones the cosmic ray intensity experiences considerable characteristic variations. At the time of passage of the leading part of a cyclone all cosmic ray components (before barometric correction) experience an increase while at the time of passage of the trailing part they experience a decrease. The maximum changes, approximately 10%, are observed in the neutron component, and considerably smaller changes occur in the meson component. The barometric coefficient, computed from the effect of the passage of "young" cyclones, coincides with the expected value for all cosmic ray components recorded at Yakutsk. Whereas, for the neutron component, the effect of passage of a cyclone can be attributed to the barometric effect, for the hard component the greater part of the effect can be attributed to temperature change. The neutron component, recorded at sea level at a latitude of 50° , does not show significant variations due to changes in atmospheric temperature. It is concluded that cosmic ray variations during the passage of cyclones agree with the theory of meteorological effects based on the two-meson model of generation of the cosmic ray hard component and that the meteorological effects of the neutron component can be attributed essentially to the barometric effect. Orig. art. has: 3 figures and 1 table.

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L 41073-65

ACCESSION NR: AT5006968

ASSOCIATION: Institut kosmofizicheskikh issledovaniy i aeronomii, Yakutskiy
filial, AN SSSR (Institute of Space Research and Aeronomy, Yakutsk Branch,
AN SSSR)

SUBMITTED: 23Oct64

ENCL: 01

SUB CODE: ES, AA

NO REF SOV: 006

OTHER: 001

Card 3/4

DANILOV, A.A.; CHIRKOV, V.I.

Correction factor for the K-index of the Yakutsk magnetic observatory. Geomag. i aer. 5 no.3:588-590 My-Je '65.

(MIRA 18:5)

1. Institut kosmofizicheskikh issledovaniy i aeronomii Yakutskogo filiala Sibirskogo otdeleniya AN SSSR.

POLOVINKO, A.G., SAVINKO, Y.I., LANTOV, A.A.

Scraper haulage of coal in the making of cross cuts and cross holes. Ugol' 40 no.4:56-58 Apr '65. (MIRA 18:5)

1. Shakhts "Zamkovskaya" No.1 (near Kadyanov 11 km from Lerezhensk). 2. Kommunarsky Gornometallimberzhskiy kombinat (for Savenko, Lunilov).

ACC NR: AP6021813

SOURCE CODE: UR/0413/66/000/012/0092/0092

INVENTOR: Galerkin, Yu. B.; Danilov, A. A.

ORG: None

TITLE: Switching attachment for a unit which measures pressures on the rotating surface of components in turbines. Class 42, No. 182907 [announced by the Leningrad Polytechnical Institute im. M. I. Kalinin (Leningradskiy politekhnicheskii institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 92

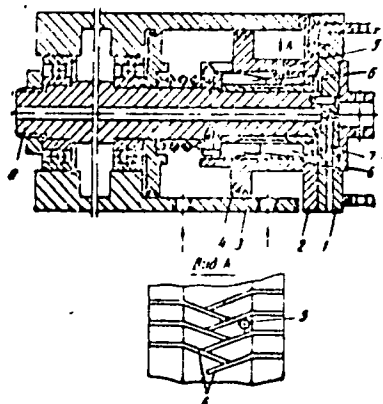
TOPIC TAGS: turbine blade, turbine rotor, test facility, pressure measuring instrument

ABSTRACT: This Author's Certificate introduces a switching attachment for a unit which measures pressures on the rotating surfaces of turbine components. The device contains sliding distributor and selection discs and a pneumatic spring drive. The unit is designed for simplified construction and automatic switching control. The drive is made in the form of a double-action piston located in a pneumatic cylinder and connected to the selection disc. This piston is equipped with a guide catch for angular motion of the selection disc with the aid of leaf springs fastened to the sleeve of a rotating shaft rigidly connected to the distributor disc.

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UDC: 62-32;[531.787.9:62-135-25]

ACC NR: AP6021813



1—distributor disc; 2—selection disc; 3—pneumatic cylinder; 4—piston; 5—guide catch; 6—leaf springs; 7—sleeve; 8—shaft

SUB CODE: 13/ SUBM DATE: 19May65

Card 2/2

ACC NR: AP6028351

SOURCE CODE: UR/0203/66/006/004/0664/0670

AUTHOR: Danilov, A. A..

ORG: Institute of Cosmophysical Investigations and Aeronomy, Yakutsk Section, SO, AN SSSR (Institut kosmofizicheskikh issledovaniy i aeronomii Yakutskogo filiala SO AN SSSR)

TITLE: Dependence of cosmic ray variations upon the shortest distance from the Earth to the axis of a corpuscular stream

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 4, 1966, 664-670

TOPIC TAGS: solar active region, central meridian, geomagnetic perturbation, corpuscular stream, cosmic ray, solar hemisphere, interplanetary magnetic field, geomagnetic disturbance, solar corpuscular radiation, solar disc, solar disturbance

ABSTRACT: When the moment of passage of the solar active region through the central meridian and the data of geomagnetic perturbations are known, it is possible to determine the distance from the Earth to the axis of the corpuscular stream. The variation of the intensity of cosmic rays depends upon the angle $\Delta\phi = \phi_a - \phi_s$, where ϕ_a is the heliographic latitude of the active region and ϕ_s is the heliographic latitude of the apparent center of the solar disk. This angle is proportional to the distance between the Earth and the stream axis.

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UDC: 523.165

ACC NR: AP6028351

Analysis of diurnal variations of magnetic perturbation, characterized as disturbances and small storms, taken from data of magnetic observatories on Earth at longitudinal distances of approximately 40° , showed a correlation with variations of cosmic-ray intensity and the angle $\Delta\phi$ of active formations on the Northern Hemisphere of the Sun. The sign of correlation depends upon the position of the active region on the Sun. When the active region is to the north of the apparent disk center, the correlation is positive; when the region is to the south, the sign is negative. The first harmonic of the magnetic variation increases when the positive $\Delta\phi$ decreases. The first harmonic does not depend on negative $\Delta\phi$. On Earth, diurnal variations of cosmic rays were greater in the Northern Hemisphere than at southern stations during the IGY. No correlations were found between variations of cosmic rays and first harmonics of magnetic variations and negative $\Delta\phi$. One may conclude that an asymmetry of solar activity exists on the Northern and Southern Hemispheres of the Sun. This asymmetry may be caused by corpuscular streams which deflect the force lines of the interplanetary magnetic field south of the ecliptic plane. The Earth in a stationary state is connected by force lines of the interplanetary magnetic field with the Northern Hemisphere of the Sun. The force lines of the interplanetary magnetic field are bent south of the solar equator. In the axial region of the corpuscular stream, the magnetic horizontal component is parallel and in the periphery it is transverse.

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ACC NR: AP6028351

The author thanks Yu. D. Kalinin for his interest in this study, A. I. Kuz'min and G. F. Krymskiy for the discussion of results, and V. I. Novikova, B. P. Krivoschapkin, and S. O. Morozova for their help. Orig. art. has: 7 figures, 1 table, and 1 formula.

SUB CODE: 0 / SUBM DATE: 04May65/ ORIG REF: 009/ OTH REF: 007

Card 3/3

ACC NR: AP6032687

SOURCE CODE: UR/0203/66/006/005/0837/0841

AUTHOR: Danilov, A. A.

ORG: Institute of Cosmophysical Investigations and Aeronomy of the Yakutsk Branch, SO, AN SSSR (Institut kosmofizicheskikh issledovaniy i aeronomii Yakutskogo filiala SO AN SSSR)

TITLE: Cosmic-ray variations during bay-shaped magnetic disturbances

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 837-841

TOPIC TAGS: polar storm, magnetic disturbance, magnetogram, horizontal component, vertical component, cosmic ray, particle stream, *geomagnetic disturbance*

ABSTRACT: A basic polar storm P is a magnetic disturbance lasting several hours, appearing in magnetograms in the bay form. This bay is large in the polar latitudes and small in the middle latitudes. Bay-shaped magnetic disturbances were taken from magnetograms and K and K_p indices characterizing the magnetic state of the worldwide station network. Mean values of horizontal (H) and vertical (Z) components of the geomagnetic field were taken from Chelyushkin, Dikson, Barrow, College, Yakutsk, and Honolulu stations. S_q variations were eliminated from data used for investigations. Data on the neutron component of cosmic rays obtained in Yakutsk every 2 hr were analyzed. The processing was

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UDC: 523.165

ACC NR: AP6032687

done by epoch superposition. Periods containing the Forbush effect were eliminated. Results of this analysis were represented graphically separating variations associated with periods of bay-shaped magnetic disturbances from those of quiet days. P-storms are of Class I and class II, depending upon bays and diurnal variations. The first harmonic of the P-storm of the class I is greater than that of class II. The first harmonic of P-storms was determined for other cosmic-ray stations. The first harmonic at all stations was greater at the moment of the P-storm than either before and after it. Analysis of cosmic-ray variations during bay-shaped magnetic disturbances proved that the amplitude of cosmic rays increases symmetrically in both hemispheres. This phenomenon indicates that the earth was enclosed within the whole stream of particles. The author expresses thanks to Yu. D. Kalinin, A. Yu. Kuz'inin, and G. F. Kryniskiy for the discussion of the results, and V. I. Novikova, A. V. Sobolev, and B. P. Krivoschapkin for their aid. Orig. art. has: 3 tables, 1 figure, and 3 formulas.

SUB CODE: 08/ SUBM DATE: 04May65/ ORIG REF: 002/ Oth REF: 004

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L 3428-66 EWT(1)/EWT(m)/EPF(e)/FCC/EWA(h) RPL WW/GS/GW

ACCESSION NR: AT5023558

UR/0000/65/000/000/0048/0050

AUTHOR: Danilov, A. D. 44.55 30 84

TITLE: Composition of the atmosphere in the region 100-200 km

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 48-50

TOPIC TAGS: upper atmosphere, atmospheric property

ABSTRACT: Experimental studies of the neutral components of the upper atmosphere carried out during the past decade by using optical and mass-spectrometric methods are described. The measured concentrations of O_2 , N_2 and O in the range of altitudes 100-200 km which have been obtained from these investigations are presented. It is shown that molecular nitrogen is the dominating component to at least 200 km, and recent satellite measurements extend this to 300-350 km. Orig. art. has: 2 diagrams and 1 table. 44.55 72

ASSOCIATION: none

SUBMITTED: 02Sep65

NO REF SOV: 004

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ENCL: 00

OTHER: 012

SUB CODE: ES

L 1277-66 EWA(h)/EWT(1)/FCC GW/GS

ACCESSION NR: AT5023587

UR/0000/65/000/000/0216/0219

AUTHOR: Ivanov-Kholodnyy, G. S.; Danilov, A. D.

46
B+1

TITLE: Variations in the ion composition of the atmosphere at altitudes of 100-200 km

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 216-219

TOPIC TAGS: ionosphere, ion concentration, mass spectrometry, diurnal variation, solar activity

ABSTRACT: Mass-spectrometric data are used for studying fluctuations in the ion concentration at altitudes of 100-200 km with respect to time of day and solar activity. Experimental graphs are given for the diurnal variation in relative concentrations O^+/n_e and NO^+/n_e . Theoretical analysis shows that NO^+/O_2^+ should be independent of altitude and solar zenith distance in the 140-180 km region when the composition and density of the atmosphere remain constant. Experimental observations confirm this relationship within a factor of 1.5. A table is given showing the

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ACCESSION NR: AT5023507

relationships between ion concentration, intensity of ionizing radiation and atmospheric density in various regions of the ionosphere. In spite of the fact that the electron concentration and relative concentrations of O^+ ions are different functions of solar zenith distance at different levels of solar activity, absolute O^+ concentrations are not noticeably dependent on activity, which indicates a simultaneous change in both the intensity of ionizing radiation and the atmospheric density during the solar cycle. An analysis of the experimental data is used for a more precise determination of the ratio between the constants of fundamental ion reactions in the ionosphere:

$$\gamma_{NO^+}/\alpha_{NO^+} \approx 4 \cdot 10^{-4}; \gamma_{O^+}/\alpha_{O^+} \approx 2 \cdot 10^{-4}.$$

Orig. art. has: 3 figures, 1 table.

[14]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES

NO REF SOV: 000

OTHER: 000

ATD PRESS: 4102

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DANILOV, A.D.

Radio astronomical research and the ionosphere of Venus. Dokl. AN
SSSR 162 no.4:774-777 Jo '65. (MIRA 18:5)

1. Institut prikladnoy geofiziki AN SSSR. Submitted December 7,
1964.

DA NILOV, A.D.

Formation of NO in the upper atmosphere. Isk.sput.Zem. no.5:
60-65 '60. (MIRA 13:5)
(Atmospheric nucleation)

DANILOV, A. D., Cand. Phys-Math. Sci. (USSR) "Molecular Ions
and Associated Processes in the Ionosphere." Moscow, 1981. 80 pp.
(Instit. of Applied Geophysics, Acad. of Sci. USSR) Sci. Series
(KL Samp 10-11, 810).

DANILOV, A. D., ISTOMIN, V. G., and POLOSKOV, S. M.

"Results of Research into the Ionosphere's Composition
with the Help of Rockets and Sputniks, and Explanation
of Physical Processes which Determine the Composition of
the Static Ionosphere."

Report presented at the Commission on Space Research, 2nd Intl.
Symposium and Plenary Meeting, 7-18 April 1961, Florence Italy.

32283

S. 169 '61-010-011/057/065
D228 D304

26 1531
11 1530 3.5120

AUTHOR: Danilov, A D

TITLE: The question of the formation of O_2^+ ions in the upper atmosphere

PERIODICAL: Referativnyy zhurnal Geofizika n. 4, 1961, 4, abstract 11340 (V sb. Isklyss'yv spitsniki Zemli, no. 7, M., AN SSSR, 1961, 56 - 59)

TEXT: The question of the different mechanisms of formation of O_2^+ ions in the earth's atmosphere at heights of 300 - 400 km is considered. It is shown that the overcharging reaction $O^+ + O_2 \rightarrow O_2^+$ previously proposed by a number of authors, cannot ensure an adequate rate of formation of O_2^+ ions to compensate their rapid disappearance. The role of the reaction of positive recombination $O_2^+ + O \rightarrow O^+ + O_2$ is shown that for heights greater than 200 km the formation of O_2^+ ions must take place as a result of a process

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S 163/61 000 011 057/065
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The question of the formation .

which is unrelated to molecular oxygen, since the latter's concentration falls sharply at these altitudes in account of dissociation. The reaction $O_2 \rightarrow O + O$ by which may explain the distribution of the concentration of O atoms is suggested as a possible mechanism responsible for the formation of O atoms at heights of 100-150 km. Abstracted & translated from Russian.

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S/560/61/000/008/005/010
E032/E514

17.4110

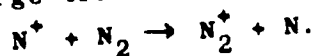
11.1530 3.5131

AUTHOR: Danilov, A. D.

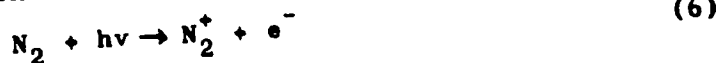
TITLE: Production of molecular ions in the upper atmosphere

PERIODICAL: Akademiya nauk SSSR, Iskusstvennyye sputniki zemli, 1961, No.8, pp. 72-76

TEXT: The present author investigates the production of N_2^+ ions by the charge transfer reaction



If the reaction-rate constant γ is of the order of $10^{-10} \text{ cm}^3/\text{sec}$ (this problem was discussed in detail by the author in Ref.6: Iskusstvennyye sputniki Zemli, No.5, izd-vo AN SSSR, 1960, p.60), then the production of the N_2^+ ions via this reaction should be more efficient than the direct photoionization of N_2 molecules. Denoting the reaction-rate for the process given by Eq.(5) by $V_5 = \gamma [N^+]/[N_2]$ and the reaction-rate for the photoionization process



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by $v_6 = \sigma [N_2] n_{kB}$, where n_{kB} is the flux of the ionizing radiation and σ is the ionization cross-section, then the ratio of the two reaction-rates is given by

$$\frac{v_5}{v_6} = \frac{\gamma [N^+]}{\sigma n_{kB}}$$

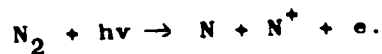
The concentration of the N^+ ions in the range 250-500 km does not vary very much and is of the order of 10^5 ions/cm³ (Ref.3: V. G. Istomin. *Iskusstvennyye sputniki Zemli*, No.4, izd-vo AN SSSR, 1960, p.171). If it is assumed that the solar ultraviolet flux ($\lambda < 800 \text{ \AA}$) is of the order of $0.4 \text{ erg}\cdot\text{cm}^{-2} \text{ sec}^{-1}$ (Ref.12: E. T. Byram, T. A. Chubb, H. Friedman. *J. Geoph. Res.*, 61, 251, 1956), which corresponds to $n_{kB} \sim 10^{10} \text{ quantum}\cdot\text{cm}^{-2} \text{ sec}^{-1}$, then the reaction-rate for Eq.(5) turns out to be greater by several orders as compared with the photoionization rate. If, on the other hand, the fluxes are assumed to be $6\cdot 10^{11} \text{ quantum}\cdot\text{cm}^{-2} \text{ sec}^{-1}$ (Ref.13: G. S. Ivanov-Kholodnyy. *Dokl. AN SSSR*, 137, 79, 1961), then the

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rate for the charge transfer reaction above 250 km turns out to be greater by a factor of 5 to 10 than the rate of photoionization. At the same time, at 200 km or less the two rates may be comparable. It should, however, be noted that in the case of radiation with $\lambda < 400 \text{ \AA}$, a major part of the radiation absorbed by the N_2 molecule may be used up in the production of N^+ in accordance with the reaction



The neutralization of the N_2^+ ions should occur in accordance with the reaction



The corresponding coefficient α_7 has been investigated experimentally by R. B. Bryan, R. B. Holt and O. Oldenberg (Ref.14: Phys. Rev., 106, 83, 1957) and E. P. Bialecke and A. A. Dougol (Ref.15: J. Geoph. Res., 63, 539, 1958) and is known to be equal to $10^{-6} \text{ cm}^3 \cdot \text{sec}^{-1}$. If the reactions (5) and (7) are chiefly responsible for the production and neutralization of N_2^+ ions, then

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$$v_5 = \gamma [N^+][N_2] = v_7 = \alpha_7 [N_2^+] n_e$$

and the ratio of the concentrations of N_2^+ and N^+ is easily shown to be

$$\frac{[N_2^+]}{[N^+]} = \frac{\gamma [N_2]}{\alpha_7 n_e}$$

This ratio can be compared directly with experiment. The experimental data employed by the present author in this comparison were taken from the paper by V. V. Mikhnevich, B. S. Danilin, A. I. Repnev, V. A. Sokolov (Iskusstvennyye sputniki Zemli, No.3, izd-vo AN SSSR, 1959, p.84; Ref.16) assuming that the fraction of N_2 in the total density is constant and equal to 3/4; the quantity n_e was taken from the data reported by K. I. Gringauz (Ref.17: Dokl. AN SSSR, 120, 1234, 1958; Iskusstvennyye sputniki Zemli, No.1, izd-vo AN SSSR, 1958, p.62). The results obtained are summarized in the table.

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H, km	$n_e \cdot 10^8 cm^{-3}$	$\rho \cdot 10^{-12} g cm^{-3}$	$[N_2] \cdot 10^8 cm^{-3}$	$0.01 \frac{[N_2]}{n_e}$	$100 \frac{[N_2^+]}{[N_2]}$
200	4.0	270	73	110	440
250	13	110	18		56
300	20	36	5.8		11.6
350	16	14	2.3	1.4	5.0
400	14	6.6	1.1	0.79	3.2
500	10	2.2	0.36	0.36	1.4

Fig.1 shows the calculated (curve 1) and experimental (curve 2) results for the ratio $[N_2^+]/[N_2]$. The agreement between the experimental and the calculated results indicates that the choice of the reactions (5) and (7) is correct and these particular reactions are in fact responsible for the presence of these ions between 200 and 500 km. In order to produce an agreement between the absolute calculated and observed values of Card 5/9

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$[N_2^+]/N^+$ the quantity γ should be $4 \cdot 10^{-10} \text{ cm}^3/\text{sec}$, which agrees with the assumed value (Ref.6). Thus, it appears that of the five ions present in the upper atmosphere only O^+ and N^+ are "primary", i.e. they are produced as a result of direct photo-ionization. Molecular ions on the other hand appear as a result of secondary reactions in which the atomic ions participate. In recombination processes, on the other hand, the molecular ions play the leading part, since they very rapidly combine with electrons through reactions of the form given by (2) and (7). The corresponding reaction-rate constant is very high ($10^{-6} \text{ cm}^3/\text{sec}$). Moreover, the radiative reactions

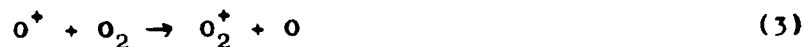


are not very appreciable ($\alpha_{8,9} 10^{-12} \text{ cm}^3/\text{sec}$; Ref.18: S.K.Mintra, Verkhnyaya atmosfera, M., IL, 1955, p.278; Ref.19: S. F. Singer, Missiles and Rockets, 5, No.15, 21, 1959). Hence, the majority of atomic ions between 100 and 500 km succeed in taking part in the
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charge transfer reaction of the form



before they recombine with an electron in accordance with the reaction



or



In fact,

$$\frac{v_1}{v_8} = \frac{\gamma [O^+] [N_2]}{\alpha_8 [O^+] n_2} \approx \frac{10^{-10} [N_2]}{10^{-12} n_e} = 10^2 \frac{[N_2]}{n_e} \quad (10)$$

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Thus, the total mass of positive ions in the upper atmosphere can be looked upon as consisting of two reservoirs, one of which consists of atomic and the other molecular ions. The total number of ions is always equal to the number of electrons. The first reservoir is continuously filled as a result of photo-ionization and loses some of its content through transitions of atomic ions into molecular ions through charge transfer. In the molecular reservoir the inflow of ions from the atomic reservoir occurs through the charge transfer reaction and the neutralization takes place via the dissociative recombination process. There are 1 figure, 1 table and 21 references: 10 Soviet and 11 non-Soviet.

SUBMITTED: October 11, 1960

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32287

S/169/61 001/011/064/065
D228 D304

3.1810

AUTHOR: Danilov, A.D.

TITLE: The mechanism of the stimulation of the red oxygen line in the airglow

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1961, 23, abstract 11G226 (V sb. Iskusstv. spuzniki Zemli, no. 8 M., AN SSSR, 1961, 77 - 80)

TEXT: The formation of excited oxygen atoms, necessary for the luminescence of the 6300 Å line in the airglow spectrum, is considered as a result of the reaction $O_2^+ + e \rightarrow O + O^*(1)$. Data on n_e and $[O_2^+]$, obtained with the help of rockets and satellites, were used in the calculations; a value of $10^{-6} \text{ cm}^3 \text{ sec}^{-1}$ was taken for the coefficient of the rate of reaction (1). The deactivation factor was studied on the assumption that each collision leads to the extinction of the excited atom. The distribution of the intensity of luminescence of the 6300 Å line was calculated with the altitu-
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de in the unit of volume; the obtained maximum of the layer of luminescence is situated at a height of 300 km. Magnitudes of 2×10^8 quanta/cm²sec by night and 5×10^9 quanta/cm²sec by day were obtained for the intensity of the line at the earth's surface. The calculated values of the height of the emission layer and the luminescence intensity agree well with the available experimental data, references. [Abstractor's note: Complete translation]

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3.5/20
11.15.30

S/560/61/000/010/015/016
D299/D302

AUTHOR Danilov, A. D.
TITLE On molecular nitrogen in the upper atmosphere
SOURCE Akademiya nauk SSSR Iskusstvennyye sputniki
Zemli. no 10. Moscow, '96'. 98-'0'

TEXT Until recently, it was assumed that at altitudes above 160 km atomic oxygen is predominant in the composition of the upper atmosphere. A number of new data, however obtained by means of research rockets and satellites, led to the conclusion that molecular nitrogen is a basic constituent of the upper atmosphere too. Measurements conducted by the Aerobee-rocket and by Soviet research rockets showed that the ratio of N_2 to O is the same at 200 - 220 km as at lower altitudes. Also, experimental data on ionic composition are indirect proof of the constant composition of the atmosphere.

Card 1/3

On molecular nitrogen

S/560/61/000/010/015/016
D299/D302

up to high altitudes. By considering dissociation and diffusion processes, M. Nicolet (Ref. 21, Planet. Space Sci. 5, 77, 1961) showed that in the atmosphere the condition of equality of concentration between molecular and atomic components is satisfied at an altitude of 430 km. As at such altitudes practically no molecular oxygen is found, this means that molecular nitrogen constitutes half the total density even at an altitude of 430 km. It was found that no strong dissociation of molecular nitrogen takes place in the upper atmosphere. In conclusion, it can be assumed that molecular nitrogen is present in the atmosphere in considerable amounts up to altitudes of the order of 400 km. There are 24 references, 13 Soviet-bloc and 11 non-Soviet-bloc (including 1 translation). The 4 most recent references to the English-language publications read as follows: J. W. Townsend, Phys. and Med. Atm. and Space, New York-London, John Wiley and Sons Inc., 1960, p. 112; H. Friedman, Trans. Intern. Astr. Un., 1966, 1969.

Card 2/3

1961

S/560/61/000/010/015/016
D229/D302

On molecular nitrogen .

Cambridge Univ. Press, 1960; W. Prister, H. A. Martin, Bonn
Univ. Obs. Rep., no. 29, 1960; M. Nicolet, Plant Space Sci .
5, 77, 1961.

SUBMITTED: April 10, 1961

Card 3/3

3,5120

11.1530

29720

S/169/61/000/008/036/053

A006/A101

AUTHOR: Danilov, A. D.

TITLE: On the glow of nitrogen in atomic state in a nocturnal sky

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 8, 1961, 22, abstract 80165
("Geomagnetizm i aeronomiya", 1961, v. 1, no. 1, 45-48)

TEXT: The author analyzes various possible ways of forming excited nitrogen atoms necessary for the glow of lines NI 5200 Å. It was found that the reaction of dissociative recombination of N_2^+ ions was most effective. On the basis of experimental data on ion and electron concentrations and the reaction rate of dissociative recombination, the author calculated the rate of formation of excited N atoms, and the intensity of glow of line 5200 Å at each height, by taking into account deactivation. The intensity and height of the glow layer of line 5200 Å are in agreement with experimental data available. The possibility was studied of explaining the glow of other NI lines in the nocturnal sky spectrum with the aid of the same reaction. An intensity of $4.7 \cdot 10^3$ Rayleigh of line 10,400 Å and the altitude distribution of glow of this line were obtained. The intensity obtained was compared with the estimated intensity of line 10,400 Å.

Card 1/2

29720

S/169/61/000/008/036/053

AC06/A101

On the glow of nitrogen in atomic state ...

according to N. I. Fedorova's publication, and a satisfactory agreement was obtained. The approximate intensity of line 3466 Å to be expected in the nocturnal sky spectrum was calculated and was found to be equal to 20 Rayleigh. There are 14 references.

A. Danilov

[Abstracter's note: Complete translation]

Card 2/2

DANILOV, A.D.

Nitrogen dissociation in the upper atmosphere. Geomag. i aer. 1
no.2:174-177 Mr-Ap '61. (MIRA 14:7)

1. Institut prikladnoy geofiziki AN SSSR.
(Atmosphere, Upper) (Nitrogen) (Dissociation)

DANILOV, A.D.

Models of the ionosphere of Venus and Mars. Geomag. i aer.
1 no.3:314-319 My-Je '61. (MIRA 14:9)

1. Institut prikladnoy geofiziki AN SSSR.
(Venus (Planet)) (Mars (Planet)) (Ionosphere)

9.9100 also 1041

26.2440

244514

PERIODICAL: Doklady Akademii Nauk SSSR, v. 177, no. 1, 1961, pp. 98-110.

TEXT: It appears from reliable data that the N_2^+ ions are formed by the reaction $O^+ + N_2 \longrightarrow NO^+ + N$ while its dissociation proceeds according to the reaction $NO^+ + e \longrightarrow N + O$. A more exact investigation of the reaction $O^+ + O_2 \longrightarrow O_2^+ + e$ (3) proposed by Brant (Ref. 1) and Chamberlain (Ref. 2) as the origin for the formation of O_2^+ ions showed that this reaction gives the rate of formation of the O_2^+ ions only up to an altitude of 150-160 km, since at higher altitudes the concentration of O_2 decreases rapidly. Also the formation of O_2^+ ions could not be due to photoionization of the O_2 ions since at altitudes of 300-400 km a

Card 1/3

21972

10.10.1977 10.10.1977
10.10.1977

molecular ions in the upper atmosphere

sufficient number of O molecules is not available. It is suggested in the present paper that the O_2^+ ions at these altitudes are formed by the reaction $O + O^+ \rightarrow O_2^+ + h\nu$ (5). As is seen from the curve of Fig. 1, the rate of formation of the O_2^+ ions according to this reaction agrees well with the destruction of these ions. Next, it is shown by a comparison of the theoretical and the experimental results that the production and destruction of N_2^+ ions at altitudes of 200-300 km proceed according to the reactions $N^+ + N_2 \rightarrow N_2^+ + N$ and $N_2^+ + e \rightarrow N + N$. Further, the intensity of ionization is calculated as a function of the altitude. The results of calculation of the effective recombination coefficient α' are collected in Table 1:

H, km 120 140 160 180 200 250 300 350 400

$\alpha' \cdot 10^6$ 1.0 0.97 0.82 0.76 0.58 0.17 0.4 0.1 0.1

These results agree with the new data on the ionized emission from the sun in the UV. The results are shown graphically in Fig. 3. V. G. Istomin

Card 2/5

1972

S/020/61/137/005/015/026
B104/B214

Molecular ions in the upper atmosphere

and K. I. Gringauz are mentioned. There are 3 figures, 1 table, and 15 references: 8 Soviet-bloc and 7 non-Soviet-bloc. The most recent references to English-language publications read as follows: Ref. 5: J. W. Chamberlain, *Aph. J.*, 127(1), 54 (1958); Ref. 6: J. C. Brandt, *Aph. J.*, 128(3), 719 (1958); Ref. 11: E. P. Bialecke, A. A. Dougal, *J. Geophys. Res.*, 63, No. 3, 539, (1958).

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR
(Institute of Applied Geophysics of the Academy of
Sciences USSR)

PRESENTED: December 26, 1960, by Ye. K. Fedorov, Academician

SUBMITTED: December 21, 1960

Card ~~3/6~~
3

DANILOV, A. D.

"Some Questions, Connected with Recombination and Ionization Processes
in the Earth Atmosphere"

Soviet Papers Presented at Plenary Meetings of committee on Space Research
(COSPAR) and Third International Space Science Symposium, Washington, D. C.,
23 Apr - 9 May 62.

DANILOV, A. D.

Model of Venus and Mars Ionospheres"

Soviet Papers presented at Plenary Meetings of Committee on Space Research
(COSPAR) and Third International Space Symposium, Washington, D. C.,
23 Apr - 9 May 62

42139

S 20-32 002/002/015 017
1046.1246

AUTHORS Danilov, A. D. and Yatsenko, S. P.
TITLE On the possibility of existence of high electron concentrations in the night atmosphere of Venus
PERIODICAL Geomagnetizm i aeronomiya, v. 2, no. 2, 1962, 363-364
TEXT The 10-cm radio emission of Venus, suggestive of a powerful ionosphere (high electron concentrations), is explained by analogy with the nocturnal ionization in the terrestrial F-region, namely by introducing streams of soft electrons as an ionizing agent supplementary to solar radiation. The most important English references are C. H. Mayer, T. P. McCullough, R. M. Sloanaker, Aph. J., 1958, 127, no. 1, 1; Report to the XIII General Assembly URSI, London, 1960; D. F. Johnes, Planet. Space Sci., 1961, 5, no. 2, 166.
ASSOCIATION Institut prikladnoy geofiziki (Institute of Applied Geophysics)
SUBMITTED February 13, 1962

Card 1/1

DANILOV, A. D.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Applied Geophysics 1962:

"Molecular Ions and Related Processes in the Ionosphere."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

DANILOV, A. D.; KHOLODNYI, G. S. I.

" Data on the Power of the Energy Source in the Ionosphere."

abstract presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 17-31 Aug 63.

DANILOV, A.D.

Some problems connected with recombination and ionization processes
in the earth's atmosphere. Isk.sput.Zem. no.15:38-43 '63.

(MIRA 16:4)

(Atmospheric nucleation)

DANILOV, A.D.

Ionization of argon in the upper atmosphere. Kosm. issl. 1
n .2:256-260 S-0 '63. (MIRA 17:4)

DANILOV, A.D.; YATSENKO, S.P.

Ionospheric interpretation of the results of radio astronomical observations of Venus. Part 1. Geomag. i aer. 3 no.4:585-593
Jl-Ag '63.

Ionospheric interpretation of the results of radio astronomical observations of Venus. Part 2. 594-597 (MIRA 16:11)

1. Institut prikladnoy geofiziki AN SSSR.

DANILOV, A.D.; IVANOV-KHOLODNYY, G.S.

Experimental data on the strength of energy sources in the ionosphere. Geomag. i aer. 3 no.5:850-857 S-0 '63. (MIRA 16:11)

1. Institut prikladnoy geofiziki AN SSSR.

L 16203-63 INT(1)/DDO/TCC(+)/TS(+)-2/RS(+)/RSC-2 APTC/ACC/ATDC/
 ESD-3/APGC Po-4/PI-4/Po-4/Po-4 TT/PI-2/GN
 ACCESSION NR: AT3007027 8/2560/63/000/017/0019/0030

83

AUTHOR: Danilov, A. D.

TITLE: Ion-exchange processes in the upper atmosphere

SOURCE: AN SSSR. Izvest. sputniki Zemli, no. 17, 1963, 19-30

TOPIC TAGS: upper atmosphere ion exchange, atmospheric ion exchange, ion exchange process, ion exchange reaction, ionospheric ion exchange process, ionosphere, upper atmosphere, ion exchange

ABSTRACT: Spectrometer data gathered by the third Soviet satellite and numerous geophysical rockets indicated the presence of a relatively large number of molecular ions at 100-700 km that could not be entirely explained by direct photoionization without taking ion exchange into consideration. In investigating the ion-exchange processes of the upper atmosphere, the author evaluated in detail the analytical concepts and data given in 64 articles published in the Soviet bloc and elsewhere and found that 1) fast ion-exchange processes are present in the upper atmosphere, 2) atomic ion-molecule

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L 16203-63

ACCESSION NR: AT3007027

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reactions leading toward the formation of molecular ions are the most substantial of these processes, and 3) the investigations by Talrose, Markin, and Larin (Disc. Far. Soc., no. 33, 257, 1962) and Langstroth and Hasted (Disc. Far. Soc., no. 33, 327, 1962) give $5-10 \times 10^{-12}$ cm³/sec as the magnitude of an ion-exchange reaction constant in the ionosphere. Orig. art. has: 34 formulas.

ASSOCIATION: none

SUBMITTED: 09Jun62

DATE ACQ: 11Oct63

ENCL: 00

SUB CODE: PH

NO REF SOV: 021

OTHER: 043

Card 2/2

ACCESSION NR: AP4026239

S/0293/64/002/001/0121/0135

AUTHOR: Danilov, A. D.

TITLE: Radioastronomical investigations and modern concepts concerning the Venusian atmosphere

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 1, 1964, 121-135

TOPIC TAGS: radio astronomy, radar astronomy, planetary astronomy, Venus, Venusian ionosphere, Venusian atmosphere, radio emission, greenhouse effect, astronomical unit

ABSTRACT: The contributions of the authors of 76 cited articles are assessed in this critical review of modern concepts concerning the Venusian atmosphere. Recent radio-astronomical studies have given rise to two basic hypotheses: the greenhouse hypothesis and the ionosphere hypothesis. According to the greenhouse hypothesis, the Venusian atmosphere should contain a large quantity of water, which for the time being has not been detected experimentally, or a very high pressure at the surface, of the order of several tens of atmospheres. This hypothesis does not require the presence of large electron concentrations in the Venusian ionosphere, but considerable difficulties are encountered in explaining high surface temperatures. There apparently is a temperature increase with depth in the atmosphere, but it is difficult to explain the existence of a high

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ACCESSION NR: AP4026239

temperature gradient and the pressures of 50-100 atmospheres at the surface required to create the greenhouse effect. The difficulty in the ionosphere hypothesis is the necessity for the existence in the Venusian ionosphere of high electron concentrations of the order of $10^9/\text{cc}$. Agreement between the observed radio emission spectrum and radar data can be achieved in the 0.4-40 cm region on the assumption that the Venusian ionosphere has "windows", as shown in Fig. 1 of the Enclosure. If this assumption is valid, there are no difficulties in explaining the absence of brightening toward the limb. Correlation between the value of the astronomical unit and solar activity apparently indicates that Venus has a thick ionosphere, but the relatively low accuracy of measurements of the astronomical unit does not make it possible to detect effects associated with the transmission of radiation with different wavelengths through a dense ionosphere. The dependence of the value of the astronomical unit on the flux of solar radiation apparently supports the ionosphere hypothesis. It is concluded that at present none of the hypotheses can be either accepted in full or rejected in full. Orig. art. has: 8 figures, 2 formulas and 2 tables.

ASSOCIATION: None

Card

2/4

ACCESSION NR: AP4026239

SUBMITTED: 14Oct63

DATE ACQ: 16Apr64

ENCL: 01

SUB CODE: AS

NO REF SOV: 018

OTHER: 058

Card 3/4

ACCESSION NR: AP4034799

S/0293/64/002/002/0276/0279

AUTHOR: Danilov, A. D.; Yatsenko, S. P.

TITLE: Experimental investigation of constants of ionic exchange processes in the ionosphere

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 2, 1964, 276-279

TOPIC TAGS: geophysical rocket, mass spectrometer, radio frequency, VV device, ion reaction, gas molecule, mass spectrum, ion stream, ion formation

ABSTRACT: On 18 October 1962 a geophysical rocket rose to a height of 500 km over the territory of the USSR. This rocket carried a mass spectrometer of radio frequencies and a VV device (air outlet) from which air escaped at a definite time near the mass spectrometer. The VV device consisted of many capsules which were opened gradually. The reason for launching such a rocket was to check the reaction between the ions O^+ and N^+ and the gas molecules O_2 and N_2 discharged from the capsules of the VV device. Three kinds of reactions were

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ACCESSION NR: AP4034799

assumed. Spectra obtained by the mass spectrometer recorded O_2^+ and some traces of NO^+ ions. Ions of mass 30(NO^+) could be recorded at the sensitivity limit of the mass spectrometer, but ions of mass 28(N_2^+) were not recorded at all. An attempt has been made to evaluate the ratios of ion streams of 30 and 28 masses 28 and 30 and the velocities at which the reactions proceed. The formation of NO^+ ions proceeds slower than the formation of O_2^+ , and the formation N_2^+ ions occurs with about the same speed as that of O_2^+ . Comparison of the results obtained with those of Western scientists and those of the authors obtained by laboratory experiments shows considerable disagreement. Orig. art. has: 6 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 02Oct63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: AS

NO REF SOV: 008

OTHER: 005

Card 2/2

L 15693-65 EWT(1)/EWT(m)/EPF(c)/FCC/EWA(h) Pa-4/Pq-4/Pr-4/Pi-4/Pt-10/
Pae-2/Peb ASD-3/APFTC/ESD-3/SSD/RPL WW/GW

ACCESSION NR: AP5000169

S/0293/64/002/006/0865/0880

AUTHOR: Danilov, A. D.

TITLE: Formation of ions in the ionosphere 1

B

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 6, 1964, 865-880

TOPIC TAGS: chemical reaction, molecular oxygen, mass spectrometric measurement, molecular nitrogen, zenithal distance, dissociative recombination, nitric oxide

ABSTRACT: The usual formula for the chemical reaction which occurs in the formation of molecular oxygen ions holds good only to a height of 160 km. The existence of these ions up to heights of 300-400 km may be explained by hypotheses that do not involve the presence of molecular oxygen. A series of mass-spectrometric measurements was carried out to heights of 200-210 km, which verified the presence of a great deal of molecular nitrogen at those heights. Data on the concentration of the basic components of the atmosphere to heights of 100-200 km and with various zenithal distances of the sun were used in theoretical computations of the distribution of concentrations. Atomic-oxygen ions interact with molecular nitrogen and oxygen to produce nitric-oxide ions and molecular-oxygen ions. Ions of

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L 15693-65

ACCESSION NR: AP5000169

molecular oxygen and nitrogen disappear by dissociative recombinations. At heights of 100-200 km, nitric-oxide ions may be formed by the reaction



if the reaction-velocity constant is more than $10^{-15} \text{ cm}^3 \text{ sec}^{-1}$. The results of theoretical computations were compared with experimental data obtained at various zenithal distances of the sun. The theoretical and experimental concentrations of atomic-oxygen ions agree well. A decrease in the concentration of atomic-oxygen ions from daytime to night was observed. Theoretical and experimental data on nitric-oxide ion concentrations do not agree, and the discrepancy is of a systematic character. Orig art. has: 8 figures, 32 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Feb64

ENCL: 00

SUB CODE: AA

NO REF SOV: 026

OTHER: 030

ATD PRESS: 3144

Card 2/2

L 36329-65 ENT(1)/ENG(v)/FCC/EEC-l/EEC(t)/EWA(h) Po-l/Fe-5/Pq-l/Pae-2/

Peb/P1-l GW-2

ACCESSION NR: AP5006389

S/0053/65/085/002/0259/0296

AUTHOR: Danilov, A. D.; Ivanov-Kholodnyy, G. S.

TITLE: Investigation of ion-molecular reactions and dissociative recombination in the upper atmosphere and in the laboratory

SOURCE: Uspekhi fizicheskikh nauk, v. 85, no. 2, 1965, 259-296

TOPIC TAGS: ion molecular reaction, dissociative recombination, upper atmosphere research, ionosphere, recombination coefficient, dissociative recombination constant

ABSTRACT: This is a review article covering all the available laboratory data on the investigation of ion-molecular reactions and dissociative recombination in the upper atmosphere and in the laboratory, and summarizing the main work dealing with the determination of their role in the upper layers of the atmosphere. Emphasis is placed on the discussion of the main difficulties, contradictions, and points of view which arise in the solution of these problems. The paper is divided into two main parts, one devoted to ionospheric research and the other to laboratory research. Each part is in turn divided into two sections, one dealing

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L 36329-65
ACCESSION NR: AP5006389

with dissociative recombination and the other with ion-molecular reactions. The section dealing with dissociative recombination in the ionosphere covers the following topics: (a) Definition and theoretical calculations. (b) Use of the dissociative recombination process in ionospheric research. (c) Effective recombination coefficient and principal reactions with ions in the ionosphere. (d) Measurement of the effective recombination coefficient in the E and F1 layers of the ionosphere. (e) Deductions concerning the rate constant of dissociative recombination from measurements of the effective recombination coefficient. (f) Measurement of the rate constant in the lower part of the ionosphere. (g) Measurement of the effective recombination coefficient in the F2 layer of the ionosphere and deductions concerning the rate constant. In the discussion of the ion-molecular reaction it is shown that whereas ion molecular processes play a decisive role in the formation behavior of the ionosphere, the question of the quantitative measures of this effect still remains open. The part dealing with laboratory investigations is devoted for the most part to determination of the rate constant of dissociative recombination for the ions most abundant in the ionosphere (N_2^+ , O_2^+ , and NO^+). It is stated in the conclusion that although much data has been gathered on the upper atmosphere with the aid of rockets and satellites, the status of laboratory research is still lagging and measurements over a wide range of temperatures are still necessary. Orig. art. has: 38 formulas and 4 tables. [02]

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L 36329-65
ACCESSION NR: AP5006389

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: ES, NP

NO REF BOV: 039

OTHER: 155

ATD PRESS: 3219

Card 3/3 60

L 64523-65 EWT(1)/EWG(v)/EEG(t) Pa-5/Pae-2. OW

ACCESSION NR: AP5015412

UR/0020/65/162/004/0774/0777

AUTHOR: Danilov, A. D.

TITLE: Radio astronomy studies and the ionosphere of Venus

SOURCE: AN SSSR. Doklady, v. 162, no. 4, 1965, 774-777

TOPIC TAGS: Venus ionosphere, Venus ionosphere model

ABSTRACT: In his preceding paper (Kosmicheskiye issledovaniya, 2, no. 1, 121, 1964), the author showed that the model of the porous ionosphere (A. D. Danilov, S. P. Yatsenko, Space Research, 4, 1964) can explain all the radio astronomy data concerning Venus published prior to 1964. However, numerous new articles have appeared on the subject during 1964, and in this paper he studies data from Soviet and Western references. In the opinion of the author, the majority of the data is related to the ionosphere of the planet. This fact should be kept in mind during the interpretation of the experimental data irrespective of the model used for the explanation of the complete spectrum of the brightness temperatures of Venus radio emission. Nevertheless, the author emphasizes that there are certain data which even contradict the ionosphere hypothesis. Such are the conclusion of R. L. Carpenter (Astr. J., 69, 1, 2, 1964) concerning the low absorption of the $\lambda = 12.5$ cm wave in the Venusian

Card 1/2

L 61523-65

ACCESSION NR: AP5015412

atmosphere and the low (0.9%) reflection cross section of the 3.75 cm wave, as well as the results of the recent experiment by A. D. Kuz'min [no reference or data given]. The author believes that this may only indicate that the Venusian ionosphere is more complex than was thought earlier. Orig. art. has: 2 figures. [08]

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR (Institute of Applied Geophysics, Academy of Sciences, SSSR)

SUBMITTED: 25Nov64

ENCL: 00

SUB CODE: AA

NO REF. SOV: 005

OTHER: 012

ATD PRESS: 4037

dm
Card 2/2

L 10843-66 EWT(1)/EWT(m)/FCC/EWA(c) RPL WW/GS/GW

ACC NR: AT5023431

SOURCE CODE: UR/0000/65/000/000/0062/0065

AUTHOR: Danilov, A. D. 44.55

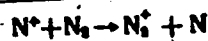
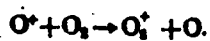
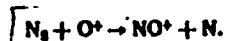
ORG: none

TITLE: Reactions in the ionosphere. Role of $X^+ + YZ \rightarrow XY^+ + Z$ processes in the ionosphere 78 B

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 62-65 44.55

TOPIC TAGS: ionosphere, reaction rate, ion, ionisation, atmospheric recombination

ABSTRACT: The rate constants of such dissociative recombinations, reported in the literature, as



and the disappearance of Ar^+ in the earth's ionosphere are discussed. These rates are verified by comparison with corresponding laboratory determined rate constants, α^0 , which conform to the equation

$$\alpha^0 = 3 \cdot 10^{-11} \sqrt{\frac{500}{T}} \text{ cm}^3 \cdot \text{sec}^{-1}$$

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L 10843-66

ACC NR: AT5023431

where T is the gas temperature in °K. A comparison of the rate constants of dissociative recombinations based on actual information obtained from the earth's ionosphere with the corresponding rate constants determined in the laboratory allows determination of the altitude at which a given process may occur. Orig. art. has: 4 formulas.

SUB CODE: 04/ SUBM DATE: 23Feb65/ ORIG REF: 010/ OTH REF: 003

jw
Cord 2/2

L 38563-66 EWT(1)/EWT(m)/FCC GW

ACC NR: AP6007735

SOURCE CODE: UR/0293/66/004/001/0047/0065

AUTHOR: Danilov, A. D.

ORG: none

TITLE: Experimental studies of the neutral composition of the atmosphere in the altitude range 100--200 km

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 1, 1966, 47-65

TOPIC TAGS: atmospheric physics, upper atmosphere, oxygen, nitrogen, mass spectrometer, ultraviolet radiation

ABSTRACT: Experimental data on the composition of the upper atmosphere in the altitude range 100--200 km are reviewed using a large number of sources from the literature. Only three constituents N_2 , O_2 , and O are considered. The investigation consists of reviewing two methods of measurement: optical and mass spectrometric, carried out on sounding rockets. The optical method consists primarily of solar UV-radiation absorption by the various atmospheric layers. No instrumentation details are included in the survey. The results of each method are discussed and listed separately and are subsequently compared with one another. The following conclusions have been reached: Gravitational separation between argon and molecular nitrogen starts at an altitude of 105--120 km; molecular nitrogen is the fundamental constituent of the atmosphere up to 200 km; the magnitudes of $[O]/[N_2]$ obtained from

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UDC: 551.510.41:551.510.536

L 38563-66

ACC NR: AP6007735

various experiments indicate that this ratio depends on the time of the day; the atomic nitrogen content is less than 5%; the mean molecular weight of the atmosphere decreases from 28 at an altitude of 100 km to 22--23 at an altitude of 200 km. Orig. art. has: 7 figures and 4 tables.

SUB CODE: 04/ SUBM DATE: 05Aug64/ ORIG REF: 022/ OTH REF: 051

Card 2/27/LP

38450-66 EWT(1)/FCC AT/GW

ACC NR: AP6024392

SOURCE CODE: UR/0020/66/169/002/0332/0334

AUTHOR: Danilov, A. D.

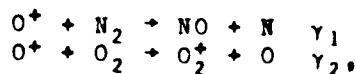
ORG: Institute of Applied Physics (Institut prikladnoy fiziki)

TITLE: Speeds of fundamental ionic and molecular processes in the ionosphere

SOURCE: AN SSSR. Doklady, v. 169, no. 2, 1966, 332-334

TOPIC TAGS: ionization ^{counter} speed, recombination ^{coefficient} speed, upper atmosphere, ~~ionic reaction~~, molecular ~~reaction~~ interaction, ionization

ABSTRACT: The determination of the speed of ionization and recombination processes in the upper atmosphere is difficult because results obtained by various authors disagree. The fundamental ionospheric reactions



investigated by various authors yielded very different values, none of which could be considered to represent the real state of ionization and recombination in the upper atmosphere. The mean value from all inves-

Card 1/2

UDC: 550.388

L 38450-66

ACC NR: AP6024392

tigations of γ_1 and γ_2 was obtained as $\gamma_1 = 2 \cdot 10^{-12}$ cm³/sec and $\gamma_2 = 2 \cdot 10^{-11}$ cm³/sec. The constant of the reaction $O^+ + O_2 \rightarrow O_2^+ + O$ depends upon the temperature, although, from the theoretical approach, the constant of ionic and molecular reactions is not influenced by temperature. Ionic and molecular reactions of the basic elements of air, O, O₂, and N₂ were produced in laboratories. Results obtained by various authors disagreed, as did those obtained from the ionosphere. A knowledge of accurate values for reaction constants is necessary for studies of ion concentrations at heights from 100 to 130 km. Orig. art. has: 4 tables and 2 formulas. [EG]

SUB CODE: 04/ SUBM DATE: 20Oct65/ ORIG REF: 008/ OTH REF: 021
ATD PRESS: 5043

Card 2/2

1 30414-2-6 -Total 11 m (1977) 100

ACC NR: AP6019597

SOURCE: NDA: 05/0195/66/004/003/0439/0452

AUTHORS: Ivanov-Kholodnyy, G. S.; Danilov, A. D.

ORG: none

TITLE: Variation in the ionic composition of the atmosphere at altitudes of 100 to 200 km

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 2, 1966, 439-452

TOPIC TAGS: upper atmosphere, atmospheric ion, atmospheric physics, chemical reaction

ABSTRACT: A detailed investigation was made of the changes in the electron and ion concentration in the upper atmosphere as a function of solar radiation and changes in the atmospheric conditions. A total of 17 chemical reactions is considered for the generation of four ionic species and electrons, or

$$\begin{aligned} [N_2^+] &= \frac{I_1[N_2]}{\gamma_{N_2^+}[O] + \alpha_{N_2^+}n_e} \\ [O^+] &= \frac{I_1[O] + [N_2^+]\gamma_{N_2}[O]}{\gamma_{NO^+}[N_2] + \gamma_{O^+}[O_2]} \\ [NO^+] &= ([N_2][O^+]\gamma_{NO^+} + [O_2^+][N_2]\gamma_1)(\alpha_{NO^+}n_e)^{-1} \\ [O_2^+] &= \frac{[O_2][O^+]\gamma_{O_2^+} + I_1[O_2]}{\alpha_{O_2^+}n_e + [N_2]\gamma_1} \end{aligned}$$

Card 1/2

UDC: 551.535.4

L 36414-66

ACC NR: AP6019597

Fourteen experimental studies are analyzed and presented for an altitude range 100 to 200 km. These results show that over a latitude change from 90° to 5° the relative concentration of the O^+/n_e ion increases but the molecular ions NO^+ and O_2^+ decrease during lower solar activity. The ratio of the concentration NO^+/O_2^+ remains constant, but with variations in the data by a factor of 1.5 in the altitude range 140--200 km. Although the concentration of the electrons varies significantly during a solar cycle, at altitudes of 160--200 km the O^+ concentration is independent of the solar activity. Comparing theoretical and experimental results, the following values are given for the rate constants

$$\gamma_{NO^+}/\alpha_{NO^+} \approx 4 \cdot 10^{-5}, \quad \gamma_{O_2^+}/\alpha_{O_2^+} \approx 2 \cdot 10^{-4},$$

corresponding to a temperature of 1000K. Orig. art. has: 5 figures, 35 formulas, and 3 tables.

[04]

SUB CODE: 04/ SUBM DATE: 31May65/ ORIG REF: 012/ OTH REF: 011/ ATD PRESS 5139

Card 2/2//LP

DANILOV, A. D.

"Some features of industrial geography in newly-inhabited lands"

report to be submitted for the United Nations Conference on the
Application of Science and Technology for the Benefit of the Less
Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

DANILOV, A.D.; SERGEYEVA, A.S., tekhn. red.

[Economic regions of the central and northwestern parts
of the R.S.F.S.R.] Ekonomicheskie raiony Tsentra i Severo-
Zapada RSFSR; uchebnoe posobie. Moskva, Mosk. In-t narodnogo
khoz., 1963. 143 p. (MIRA 16:9)
(Geography, Economic)

ANDREYEV, B.I.; VORONTSOVA, A.N.; DANILOV, A.D.; KISTANOV, V.V.;
KOSTENNIKOV, V.M.; KUSHNER, A.I.; LEDOVSKIYKH, S.I.;
LESNOV, M.F.; MALINOVSKIY, E.P.; MOSKOVA, M.I.; MUKHEIN,
G.I.; PASHKEVICH, V.I.; RZHEVUSKAYA, D.M.; SAVCHENKO, N.A.;
SKOBEYEV, D.A. [deceased]; LISOV, V.Ye., red.;
SAZANOVICH, N.K., red.

[Economic regions of the U.S.S.R.] Ekonomicheskie raiony
SSSR. Moskva, Ekonomika, 1965. 580 p. (MIRA 18:6)

1. Moscow. Institut narodnogo khozyaystva. 1. Kafedra
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khozyaystva im. G.V.Plekhanova (for all except Lisov,
Sazanovich).

DANILOV, Andrey Danilovich, kand. geogr. nauk; RODIONOVA, F.A., nauchnyy red.; NEKHLYUDOVA, A.S., red. izd-va; RAKITIN, I.T., tekhn. red.

[Geography of the U.S.S.R.; nature and population] Geografiia SSSR; priroda i naselenie. Moskva, Izd-vo "Znanie," 1961. 38 p. (Narodnyi universitet kul'tury: Estestvennonauchnyi fakul'tet, no.21) (MIRA 15:2)
(Geography) (Russia—Population)

DANILOV, A.D.

New species of pear. Bot.mat.Gerb. 15:126-131 '53.

(MLRA 7 2)
(Pear)

DANILOV, A. L.

"Economic Regionalization of the USSR." *Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya*, No. 4, 1971.

Translation: 1-22211, 1971, p. 62

AVRAAMOVA, A.A.; ALAMPIYEV, P.M.; BADIR'YAN, G.G.; BORODIN, I.A.; VASYUTIN,
V.F.; GURER, A.A.; GURARI, Ye.L.; DANILOV, A.D.; DEHEVYANKO, P.A.;
YELSUKOV, M.P.; KOLOSKOV, P.I.; LAPTEV, Y.D.; LEONT'YEV, N.P.; PECHNI-
KOV, A.M.; PROKHOROV, A.I.; RUDENKO, N.A.; CHERDANTSEV, G.N.; YAKIMOV, A.T.

P.V. Pogorel'skii; Obituary. Izv. AN SSSR. Ser. geog. no. 3: 94-95 My-Je
'55. (MLBA 8:9)

(Pogorel'skii, P.V., 1899-1955)

ALAMPIYEV, P.M.; APENCHENKO, V.S.; BEKOVA, T.N.; BYUSHGENS, L.M.; GINZBURG,
G.Z.; GORDONOV, L.Sh.; GRIGOR'YEV, A.A., akademik; GURARI, Ye.L.;
~~DAHILOV, A.D.~~; DEMIN, L.A.; DOBROV, A.S.; SHIRMUNSKIY, M.M.;
KULAGIN, G.D.; MILEYKOVSKIY, A.G.; MURZAYEV, B.M.; PAVLOV, V.V.;
POPOV, K.M.; YANITSKIY, N.F.

Lev Iakovlevich Ziman, 1900-1956; obituary. Izv. AN SSSR.Ser.geog.
no.6:153-154 N-D '56. (MLRA 10:1)
(Ziman, Lev Iakovlevich, 1900-1956)

DANILOV, A.D.; MUKHIN, G.I.; LENOV, M.; KISTANOV, V.; KOPYLOV, N.;
KOSTENNIKOV, V.; MOSHKOVA, N.; LISOV, V.Ye., red.; KHOLIN,
I.A., red.; PONOMAREVA, A.A., tekhn.red.

[Distribution of branches of the national economy of the U.S.S.R.]
Razmeshchenie otraslei narodnogo khoziaistva SSSR. Pod red. A.D.
Danilova i G.I.Mukhina. Moskva, Gosplanizdat, 1960. 331 p.
(MIRA 13:11)

1. Moscow. Gosudarstvennyy ekonomicheskii institut. 2. Kafedra
ekonomicheskoy geografii Moskovskogo gosudarstvennogo ekonomicheskogo instituta (for all, except Kholin, Ponomareva).
(Geography, Economic)

DANILOV, A.F.

Nitrous oxide anesthesia under conditions of "controlled respiration".

Vest. khir. 85 no. 8:118-121 Ag '60.

(MIRA 14:1)

(NITROUS OXIDE)

DANILOV, A. F.

USSR/Medicine - Curare-Active Drugs Nov/Dec 53

"The Curare-Like Action of Diltin (Dicholine Ester of Succinic Acid-(1) on Humans; The Possibility of Complete Immobilization With Retention of Natural Respiration," A.F. Danilov, Chair of Surgery and Toxicol Course, 1st Leningrad Med Inst in I.P. Pavlov

Farm 1 Toks, Vol 16, No 6, pp 12-16

On intravenous administration in doses of 0.2-0.25 mg/kg of wt, I produces complete relaxation of the muscles of the face, body, and extremities of 4-5 min, while respiration of normal depth is retained. By repeated administration of I in small doses one

273T36

may induce complete immobilization of human subjects for long periods without impairment of respiration. Curare-active doses of I do not affect cardiovascular functions or consciousness and the indications of the electro-encephalogram at the height of curarization. There are no aftereffects. I should be tested for use in surgery done under local anesthesia.

273T36

DANILOV, A. F.:

Naval Faculty, First Leningrad Medical Inst imeni Academician L. P. Pavlov.

DANILOV, A. F.: "Experimental data on the pharmacology of 'ditilin' and its use in the surgical clinic." Naval Faculty, First Leningrad Medical Inst imeni Academician I. P. Pavlov. Leningrad, 1956.

(Dissertation for the Degree of Candidate in Medical Sciences.)

SO: Knizhnaya Letopis', No. 20 1956.

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to one

EXCERPTA MEDICA Sec 9/Vol 13/5 SURGERY May 59

31
ann.

2378. THE USE OF DITHYLINUM IN SURGERY (Russian text) - Danilov A. F. -
VESTN. KHIR. 1958, 80/4 (107-111) Tables 1

Dithylinum was used in various major and minor surgical interventions. It was
found to be a powerful curare-like drug giving a muscle relaxation of every re-
quired duration. Indications for its use and means to diminish or instantly suspend
its action are presented.

DANILOV, A.P., land.med.nauk

Use of ditiline in operations on the chest and abdominal
cavities. Khirurgia 35 no.6:74-79 Je '59. (MIRA 12:8)

(THORAX, surg.

perop. resp. depression by succinylcholine
(Rus))

(ABDOMEN, surg.

same)

(SUCCINYLCHOLINE, ther. use

depression of resp. in abdom. & thoracic
surg. (Rus))

DANILEV, A.F.

Nitrous oxide as a surface anesthetic. In: *Journal of the American Dental Association*, 1948, 41, 17-18.
Trudy LPMI 31 no. 157-158, 1953. Vol. 17.

1. iz kafedry gospitalnykh kuznecov i lech. razrab. v gos. meditsinskogo instituta.

DANILOV, A.F.

Spontaneous rupture of the urinary bladder. Vest. khir. 93
no.9:111-115 '64. (MIRA 18:4)

1. Iz gosptal'noy khirurgicheskoy kliniki (zav. - prof. M.S.
Grigor'yev) Leningradskogo pediatricheskogo meditsinskogo instituta
na baze bol'nitsy imeni Kuybysheva (glavnyy vrach - Ye.V.Mamysheva).

ACC NR: AP6023945

(A,N)

SOURCE CODE: UR/0390/66/029/003/0308/0312

AUTHOR: Danilov, A. F.

ORG: Laboratory of Pharmacology of Biologically Active Substances, Institute of Evolutionary Physiology and Biochemistry, Academy of Sciences, SSSR im. I. M. Sechenova (Laboratoriya farmakologii biologicheskii aktivnykh veshchestv Instituta evolyutsionnoy fiziologii i biokhimii, AN SSSR)

TITLE: Curarelike effects of Subecholine

SOURCE: Farmakologiya i toksikologiya, v. 29, no. 3, 1966, 308-312

TOPIC TAGS: drug, drug effect, cholinesterase, ~~acetylcholine~~ subecholine

ABSTRACT: Subecholine has 200 times the effect of curare in suppressing cholinesterases and surpasses ditilin and imbretil as well. TMB-4, a nucleophilic agent, eliminates the curarelike effect of Subecholine. In chemical tests of therapeutic doses of Subecholine to stimulate breathing there was danger of muscle paralysis and stoppage of breathing in patients with low cholinesterase activity. [WA-50; CBE No. 10]

SUB CODE: 06/ SUBM DATE: 17Mar65/ ORIG REF: 010/ OTH REF: 010/

Card 1/1

UDC: 615.72-017.853

ACC NR: AP6023945

(A, N)

SOURCE CODE: UR/0390/66/029/003/0308/0312

AUTHOR: Danilov, A. F.

ORG: Laboratory of Pharmacology of Biologically Active Substances, Institute of Evolutionary Physiology and Biochemistry, Academy of Sciences, SSSR im. I. M. Sechenova (Laboratoriya farmakologii biologicheskii aktivnykh veshchestv Instituta evolyutsionnoy fiziologii i biokhimii, AN SSSR)

TITLE: Curarelike effects of Subecholine

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ABSTRACT: Subecholine has 200 times the effect of curare in suppressing cholinesterase and surpasses ditilin and imbretil as well. TMB-4, a nucleophilic agent, eliminates the curarelike effect of Subecholine. In chemical tests of therapeutic doses of Subecholine to stimulate breathing there was danger of muscle paralysis and stoppage of breathing in patients with low cholinesterase activity. [WA-50; CBE No. 10]

SUB CODE: 06/ SUBM DATE: 17Mar65/ ORIG REF: 010/ OTH REF: 010/

Card 1/1

UDC: 615.72-017.853

ANDON'YEV, V.L.; BAUM, V.A.; BAUMGARTEN, N.K.; BEREZIN, V.D.; BIRYUKOV, I.K.;
 BIRYUKOV, S.M.; BLOKHIN, S.I.; BOROVY, G.A.; BULEV, M.Z.; BURAKOV,
 N.A.; VERTSAYZER, B.A.; VOVK, G.M.; VORMAN, B.A.; VOSHCHININ, A.P.;
 GALAKTIONOV, V.D., kand. tekhn. nauk; GENKIN, Ye.M.; GIL'DENBLAT,
 Ya.D., kand. tekhn. nauk; GINZBURG, M.M.; GLEBOV, P.S.; GODES, B.G.;
 GOEBACHEV, V.N.; GRZHB, B.V.; GHEKULOV, L.F., kand. s.-kh. nauk;
 GRODZENSKAYA, I.Ya.; DANILOV, A.A.; DMITRIYEV, I.G.; DMITRIYENKO,
 Yu.D.; DOBROKHOTOV, D.D.; DUBININ, L.G.; DUNEKOV, M.D.; ZHOLIK,
 A.P.; ZENKOVICH, D.K.; ZIMAROV, Ye.V.; ZIMASKOV, S.V.; ZUBRIK, K.M.;
 KARANOV, I.F.; KNYAZEV, S.N.; KOLMAAYEV, N.M.; KOMAROVSKIY, V.T.;
 KOSHENKO, V.P.; KORNISTOV, D.V.; KOSTROV, I.N.; KOTLYARSKIY, D.M.;
 KRIVSKIY, M.N.; KUZNETSOV, A.Ya.; LAQAR'KOV, N.I.; LGALOV, V.G.;
 LIKHACHEV, V.P.; LOGUNOV, P.I.; MATSKOVICH, K.F.; MEL'NICHENKO,
 K.I.; MENDEL'VICH, I.R.; MIKHAYLOV, A.V., kand. tekhn. nauk;
 MUSIYVA, R.N.; NATANSON, A.V.; NIKITIN, M.V.; OVES, I.S.;
 OGUL'NIK, G.R.; OSIPOV, A.D.; OSMER, N.A.; PETROV, V.I.; PHEYSKIN,
 G.A., prof.; P'YANKOVA, Ye.V.; RAPOPORT, Ya.D.; RUMEZOV, N.P.;
 ROZANOV, M.P., kand. biol. nauk; ROCHEGOV, A.G.; RUBINCHIK, A.M.;
 RYBCHINSKIY, V.S.; SADCHIKOV, A.V.; SEMENTSOV, V.A.; SIDENKO, P.M.;
 SINYAVSKAYA, V.T.; SITAROVA, M.N.; SOSNOVIKOV, K.S.; STAVITSKIY,
 Ye.A.; STOLYAROV, B.P. [deceased]; SUDZILOVSKIY, A.O.; SYRTSOVA,
 Ye.D., kand. tekhn. nauk; FILIPPSKIY, V.P.; KHALTURIN, A.D.;
 TSISHLEVSKIY, P.M.; CHERKASOV, M.I.; CHERNYSHEV, A.A.; CHUSOVITIN,
 N.A.; SHESTOPAL, A.O.; SHEKHTER, P.A.; SHISHKO, G.A.; SHCHERBINA,
 I.N.; ENGEL', P.F.; YAKOBSON, A.G.; YAKUBOV, P.A., ARKHANGEL'SKIY,
 (Continued on next card)

ANDON'YEV, V.L.... (continued) Card 2.

Ye.A., retsenzent, red.; AKHUTIN, A.N., retsenzent, red.; BALASHOV, Yu.S., retsenzent, red.; BARABANOV, V.A., retsenzent, red.; BATUNER, P.D., retsenzent, red.; BORODIN, P.V., kand. tekhn. nauk, retsenzent, red.; VALUTSKIY, I.I., kand. tekhn. nauk, retsenzent, red.; GRIGOR'YEV, V.M., kand. tekhn. nauk, retsenzent, red.; GUBIN, M.F., retsenzent, red.; GUDAYEV, I.N., retsenzent, red.; YERMOLOV, A.I., kand. tekhn. nauk, retsenzent, red.; KARAULOV, B.F., retsenzent, red.; KRITSKIY, S.N., doktor tekhn. nauk, retsenzent, red.; LUKIN, V.V., retsenzent, red.; LUKIN, V.V., retsenzent, red.; LUSKIN, Z.D., retsenzent, red.; MATRIROSOV, A.Kh., retsenzent, red.; MENDELEYEV, D.M., retsenzent, red.; MENKEL', M.F., doktor tekhn. nauk, retsenzent, red.; OBRIZKOV, S.S., retsenzent, red.; PETRASHEN', P.N., retsenzent, red.; POLYAKOV, L.M., retsenzent, red.; RUMYANTSEV, A.M., retsenzent, red.; RYABCHIKOV, Ye.I., retsenzent, red.; STASHENKOV, N.G., retsenzent, red.; TAKANAYEV, P.F., retsenzent, red.; TARANOVSKIY, S.V., prof., doktor tekhn. nauk, retsenzent, red.; TIZDEL', R.R., retsenzent, red.; FEDOROV, Ye.M., retsenzent, red.; SHCHVYAKOV, M.N., retsenzent, red.; SHMAKOV, M.I., retsenzent, red.; ZHUK, S.Ya. [deceased], akademik, glavnyy red.; RUSSO, G.A., kand. tekhn. nauk, red.; FILIMONOV, N.A., red.; VOLKOV, L.N., red.; GRISHIN, M.M., red.; ZHURIN, V.D., prof., doktor tekhn. nauk, red.; KOSTROV, I.N., red.; LIKHACHEV, V.P., red.; MEDVEDEV, V.M., kand. tekhn. nauk, red.; MIKHAYLOV, A.V., kand. tekhn. nauk, red.; PETROV, G.D., red.; RAZIN, N.V., red.; SOBOLEV, V.P., red.; FERINGER, B.P., red.; FREYGOFER,

(Continued on next card)

ANDON'YEV, V.L.... (continued) Card 3.

Ye.F., red.; TSYPLAKOV, V.D. [deceased], red.; KOBABLINOV, P.N.,
tekhn. red.; GENKIN, Ye.M., tekhn. red.; KACHEROVSKIY, N.V., tekhn.
red.

[Volga-Don; technical account of the construction of the V.I. Lenin
Volga-Don Navigation Canal, the TSimlyansk Hydroelectric Center,
and irrigation systems] Volgo-Don; tekhnicheskii otchet o stroitel'-
stve Volgo-Donskogo sudokhodnogo kanala imeni V.I. Lenina, TSim-
lianskogo gidrouzla i orositel'nykh sooruzhenii, 1949-1952; v plati
tomakh. Moskva, Gos. energ. izd-vo. Vol.1. [General structural
descriptions] Obshchee opisanie sooruzhenii. Glav. red. S.IA. Zhuk.
Red. toma M.M. Grishin. 1957. 319 p. Vol.2. [Organization of con-
struction. Specialized operations in hydraulic engineering] Orga-
nizatsiia stroitel'stva. Spetsial'nye gidrotekhnicheskie raboty.

(Continued on next card)

ANDON'YEV, V.L.... (continued) Card 4.

Glav. red. S. I.A. Zhuk. Red. toma I.N. Kostrov. 1958. 319 p.

(MIRA 11:9)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona. 2. Chlen-korrespondent Akademii nauk SSSR (for Akhutin). 3. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin, Razin).

(Volga Don Canal—Hydraulic engineering)

SHUMKIN, B.N., SMIRNOVA, A.I., DANILOV, A.I.

Session of the Academy of Medicine of the U.S.S.R. held in Astrakhan
on the problem of intestinal of infections. Vest.AMF SSSR 13 no.9:
65-74 '58 (MIRA 11:10)

(INTESTINES--DISEASES)

SHUMKIN, B.M., dots., SMIRNOVA, A.I., DANILOV, A.I.

Astrakhan session of the Academy of Medicine of the U.S.S.R.
on the problem of intestinal infections. Vest. AMN SSSR 13

no. 10:74-80 '58

(MIRA 11:10)

(INTESTINES--DISEASES)

SHUMKIN, B.N.; DANILOV, A.I.

Activities of the Main Office of the Department of Hygiene, Microbiology, and Epidemiology of the Academy of Medical Sciences of U.S.S.R. during 1958. Vest. AMN SSSR 14 no.12:54-60 '59.

(MICROBIOLOGY)
(EPIDEMIOLOGY)

(MIRA 13:4)

SHUMKIN, Boris Nikolayevich [deceased]; DANILOV, Anatoliy Ivanovich;
SOKOLOVSKAYA, E.V., red.; LYUDKOVSKAYA, M.I., tekhn.red.

[What one should know about preventive inoculations] Chto nado
znat' o predokhranitel'nykh privivkakh. Moskva, Gos.izd-vo med.
lit-ry Medgiz, 1960. 42 p. (MIRA '3:11)
(VACCINATION) (COMMUNICABLE DISEASES--PREVENTION)